BEST PRACTICES

September 9, 2005

Simplifying Information Architecture

by Alex Cullen

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Simplifying Information Architecture

Creating An IA Program That Works

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EXECUTIVE SUMMARY

Too often an enterprise's information is an unmanaged asset — businesses can't find consistent information and IT struggles under the resulting weight of project delays and ballooning storage costs. Information architecture (IA) helps IT address business needs by providing a framework to map and describe an enterprise's information assets and their relationship to processes and systems. But IA programs fail if not approached the right way. To be successful build iteratively, focus on pain points, and execute top-down.

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NOTES & RESOURCES

Forrester interviewed 14 vendor and user companies, including Accenture, DiamondCluster, IBM Global Services, and Infosys, and surveyed Forrester's Enterprise Architecture Council. We also assessed existing methodologies from NASCIO, The Open Group, and other sources.

Related Research Documents

"Connecting Business Drivers To Enterprise Architecture"
June 17, 2005, Best Practices

"A New Perspective On Information Management"
June 12, 2005, Best Practices

"Creating The Information Architecture Function"
June 16, 2004, Best Practices

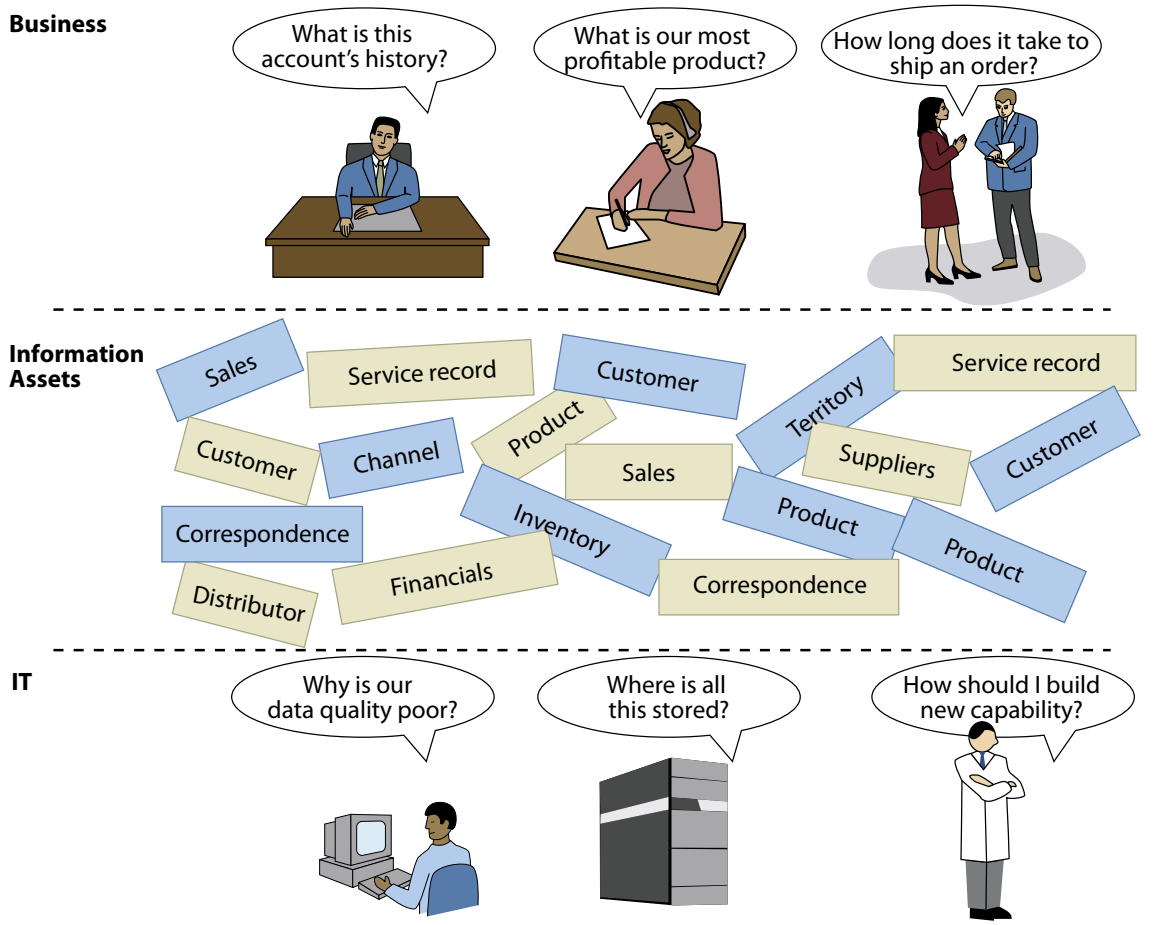
INFORMATION ANARCHY IS A SOURCE OF PAIN

An organization function that started as data processing and evolved into information technology has long struggled with out-of-control data and information gaps that cause business and IT pain.[1] Too often, organizations don't know what they have or where it is kept. Organizations repeatedly face the challenge of making information available where and when it is needed. While it would make sense for IT to have a map of the information assets and a road map for improving the use of these assets, an informal poll of 70 members of Forrester's Enterprise Architecture Council suggests that fewer than 30% of IT organizations are developing IA.

Businesses Are Unable To Exploit Information Assets

Too often information becomes an unmanaged asset. Needing a consolidated view of their customers or a deep understanding of product profitability to sharpen their business strategy, businesses find that the information they need is fragmented, inaccessible, and inconsistent (see Figure 1).

Figure 1 Today's Information Anarchy



Source: Forrester Research, Inc.

- **Fundamental business concepts have dissimilar manifestations.** A concept like "customer" may be defined differently in different applications and can't be consolidated due to these differences — e.g., "customer" as a company, as a contact within a company, as a service requestor, or as a contracting entity. And so when a business needs to make a decision based on who its customers are and how to best serve them, it finds that the answers are different depending on information sources used.

- **Email, office documents, and Web pages are poorly organized and managed.** Unstructured information is as much a part of business processes as structured data is, sprawling across email and file systems. Taxonomies to find and organize this information are rarely in place. Cross-references between this content and related structured information are ad hoc. The result? If understanding a customer requires visibility into email exchanges and correspondence in addition to transaction records, the effort to develop this consolidated view requires manual searches.[2]

- **Information anarchy blocks strategic business change.** Beyond just a source of inconvenience, unmanaged information hamstrings businesses from making strategic change. Business systems structured around different views of who the customer is and how products are distributed hinder the ability to change the business model, such as shifting from multitier distribution to direct-to-customer selling. For example, a major financial services company that wanted to streamline its product distribution was not able to understand revenue, profitability, and product mix. Why? Because it had more than one way to identify an agent, more than one channel hierarchy, and multiple ways to record product sales and costs — spread across a plethora of IT systems.

> "Years ago, the push for information strategy came from lower levels below the CIO. Today this is a board-level topic." (EA consultancy)

IT Feels The Pain Of Slowed Delivery And Ballooning Costs

Business frustration with the limited usefulness of information results in frustration with IT. But IT is holding the bag both from a credibility and cost standpoint as:

- **Project delivery is slowed by issues with data quality and sourcing.** Instead of capitalizing on existing documentation, projects drain analysis time by creating data models from scratch or investigating the formats and meaning of existing data. Management reports have to be quality-checked by IT before they can be delivered to their requestors.

> "Typical assessment prior to implementing a new app will uncover data gaps and fragmented data, with different business rules around each fragment." (IA practice leader at a major consulting firm)

- **IT bears the ballooning costs of storage and data movement.** Without a coherent information management approach, databases and disk storage requirements grow exponentially, as do the cycle times for backups and ETL processing.[3] For example, one firm would make a copy every night of its distributor database and import it into its sales contract system so that sales contracts could be matched to distributors. The result was not only a doubling of the data storage, but also a lengthy batch processing task that frequently ran into the start of the business day.

- **Ignorance about what's where and for whom hurts IT's credibility.** IT faces the embarrassment of not knowing about the current state of information usage, structure, and flows between different systems when business partners are discussing plans, needs, and issues.

> "The business clients think that IT should have this covered and don't understand when IT doesn't." (Partner, EA practice at a major consulting firm)

FIRMS NEED IA TO REAP BUSINESS VALUE AND RELIEVE IT PAIN

Firms cannot effectively use the information their business generates if they don't know what they have, don't know how it is used, and can't agree on what it means. They can't make business decisions without accurate information, and their execution on these decisions becomes needlessly slow and costly. IT must lead the charge to fix this, and IA provides the foundation.[4] Forrester defines IA as:

> *A framework providing a structured description of an enterprise's information assets and the relationship of those assets to business processes, business management, and IT systems.*

IA is the map of the information concepts used within business processes and by business management. This map details the attributes that describe what these information concepts include, how they are organized and relate to each other, and how they are implemented within IT systems. This map can be used to define a target state for information, understand the current state, and identify the necessary changes to support transition. The elements of IA include (see Figure 2):

- **Business process and business management models.** To have a foundation for IA, architects must develop models describing the processes for running and managing the business. These are used to identify the information created and employed by these processes. For example, the order-to-cash process creates orders and invoices and uses the information about products, customers, and inventory.

- **Business information conceptual entities.** The information used within and across business processes must be cataloged as the basis for further documentation. This catalog includes both structured data and unstructured content. These high-level — or core — information categories

include, for example: customer, product, distribution channel, sales, correspondence, and logistics.

- **Conceptual data models and content taxonomies.** IA must promote consistency in how information entities are used by documenting the precise definition, organization, and relationships of these conceptual entities. Conceptual data models document structured data and taxonomies document content. For example, a definition of "customer" could be: "a business entity our firm does business with, which has as subentities all contacts within the business entity, as well as references to all activities and correspondence with these contacts." The taxonomy for "customer" would include all the documents and emails that relate to activities with that customer.

- **Information entity mapping to applications and repositories.** To both develop a target-state IA and assess the current state, information entities must be cross-referenced to the application and repositories that house them. For example, by mapping all the systems that contain information on customer accounts, architects can evaluate the degree of consistency and redundancy. At the high level, this is a simple cross-reference table. At the detailed level for structured data, this would be documented via data flow diagrams and logical data models (LDM) for specific systems. At the detailed level for content this would be the schema implemented by a repository.

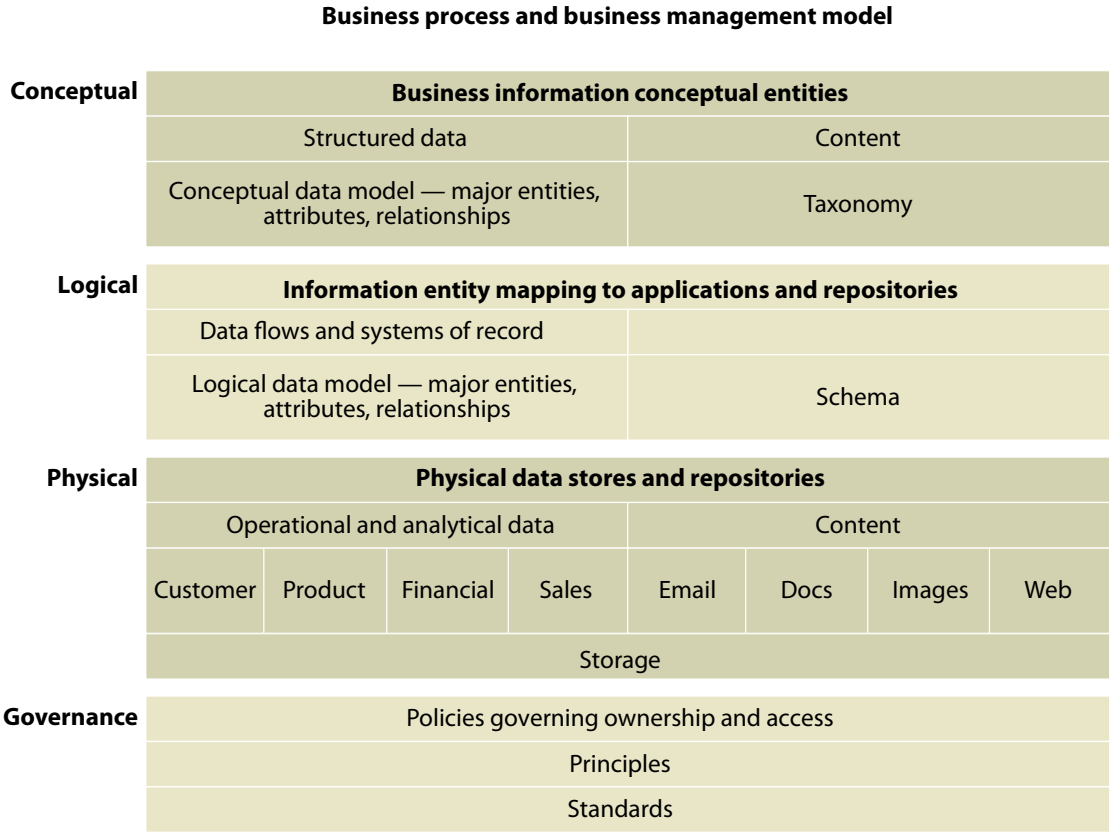
- **Physical data stores and repositories.** The physical information infrastructure consists of databases, file systems, document management systems, and data movement tools. It also includes the cross-referencing of data subjects and content categories to physical databases, file systems, and processes. For example: "The data entity "Cust_Acct" is stored in database DBORA1, and is loaded by batch job Cust_Acct_batch01."

- **Policies governing ownership and access.** Policies for information management must be defined to address meaning, quality, and confidentiality of information. An example of a policy for customer data: "Customer account information is owned by sales. Access to customer account information is based on business need and must be approved by the sales organization."

- **IA principles.** These statements of IA principles guide IT design, operations, and procurement decisions. They include assertions like, "The system of record should be designated for all core business entities. All applications should refer to this system of record."

- **Standards that govern technology projects.** Product and configuration specifications — such as identifying Oracle for the standard RDBMS or defining standard table naming formats — must be defined to simplify the technical environment for both applications and operations.

Figure 2 Information Architecture Framework



Source: Forrester Research, Inc.

IA Addresses Both Business And IT Pain

A populated IA framework provides the foundation for turning information into a managed asset with consistent meaning, availability where and when needed, and consolidated to support the needs of business processes and business management.[5] Developing this IA enables IT to (see Figure 3):

- **Identify underlying causes and solutions.** To tackle quality and accessibility issues, IA clarifies information usage within the business processes that is then mapped to IT systems. If unmanaged replication and updating causes poor information quality, then systems of record can be defined and necessary changes to implement them can be planned. For example, rather than multiple systems containing information about customers, each with different data updated at different times, all changes will be synchronized with the system designated to house the master record.

- **Assess the impact of business change.** IA plays a direct role when the business is changing its structure or operating model; for example, when restructuring sales territories. The impact in terms of information organization is more accurately assessed using IA's physical maps of all of the applications and databases in which sales territories are referenced.

- **Speed up new solution development.** Instead of each project team starting from scratch reinventing data models or wasting time trying to understand existing data sources, teams can use the IA to build on existing models, extending them as needed, and then add these extensions back to the models. Rather than each project building its own databases and having to determine where it will get its data from, it can refer to existing maps and build on existing data sources.

- **Implement information management processes.** Once the categories of information — the conceptual entities — are documented, and their implementation within the application and physical infrastructure cataloged, IT can tackle the necessary process to keep information viable, such as data cleansing, consolidating information stores, reducing storage cost, and standardizing information management tools.

Figure 3 Information Architecture Cures Business And IT Pain

Example pain point	Solution
Fundamental business concepts have dissimilar implementations	Common definitions for key business information concepts and applications are incorporated across all business units.
Email, documents, and Web pages are not organized around a common information model	• Common information model spans structured and unstructured information. • Search engines can retrieve email and other documents using schema consistent with data models.
Existing information structure does not support new business models	Information entities are cataloged, enabling needed system changes to be planned.
Information anarchy causes IT projects to be delayed	• Data definitions and sources are documented so that projects can refer to them. • Common definitions simplify integration and enable reuse.
Cost of data storage and movement is ballooning	Mapping identifies data redundancy.
Lack of knowledge hurts IT credibility	• IT has an accurate model of business information and the systems that house it. • IT can be more proactive identifying information problems and feasible solutions.

Source: Forrester Research, Inc.

PLANNING AND SUSTAINING AN EFFECTIVE IA PROGRAM

A business' IA will not likely be developed all at once, due to the enormity of the effort. Although there is no one-size-fits-all-methodology, paying attention to planning and sustaining the initiative will lead to IA that does not become "shelfware."

Build An Iterative Plan Focused On Visible Pain

When starting an IA effort develop a plan that addresses priorities, accommodates available resources, and provides value within the time frames the organization requires. To illustrate these best practices, we've created the Acme Component Organization, a fictitious company used to illustrate planning and sustaining an IA effort (see Figure 4). Firms must:

Figure 4 The Acme Component Organization's IA Plan

Building the plan	**What Acme did**
Plan for incremental build-out	Initially focus on product profitability and information on product cost, selling price, service cost
Structure iterations around pain points	Business can't accurately understand product profitability due to multiple definitions for products, costs, and prices
Define your pain-solving strategy	Develop end-to-end architecture for product information, and work with business and AD to incorporate into projects
Target deliverables to stake	End-to-end solution architecture that business understands road map and detailed models for application development
Gain stakeholder agreement	Product management, application development teams for manufacturing, order management and customer service systems, IT portfolio management office
Sustaining the program	**What Acme did**
Start at high level with model of in-scope business areas	High-level process and information model for manufacturing, sales, and customer service
Define logical target state before investigating current state	Target state architecture for product information capture, aggregation, and reporting
Develop alternatives to close gap between current and target states	Alternatives for how information is extracted and aggregated for reporting
Address policy and process gaps	Data ownership defined for product manufacturing, sales, and service data
Identify metrics that link IA deliverables to results	Metrics for converting existing systems to common data definitions
Couple IA implementation with specific business functionality	Implementation coupled with upgrades to manufacturing ERP application and enhancements to service applications

Source: Forrester Research, Inc.

- **Limit the scope — plan for an incremental build-out.** Enterprise architecture (EA) needs to have a big-picture view, but if an IA program is to produce timely deliverables, it must build them out a slice at a time to have a manageable scope. Structure increments around a specific business process, such as product profitability for Acme and the information it needs, or scope increments around specific information concepts that have broad usage — such as "product" and all the entities and uses of this subject.

- **Structure iterations around pain points.** The rationale for investing in IA is to tackle the pain points of business and IT.[6] For example, Acme's unmet business needs for profitability analysis constrains its ability to make investment decisions. And its IT application development (AD) projects are hamstrung over issues around data quality, complexity of application integration, and the expense of redundant product and cost data. How broadly or narrowly pain points are defined will bound the scope of an IA iteration.

- **Define a pain-solving strategy.** It's not enough to produce architecture documentation — IA program managers must advocate needed changes to the existing application portfolio, infrastructure capabilities, or changed organization policies and processes. As part of the IA plan, determine who needs to be involved, what they need to know, and how to influence them. For example, because Acme struggles to understand product profitability, the implications of IA may impact the AD teams supporting both sales and manufacturing applications, necessitate new data analysis systems, and impact how projects develop data models.

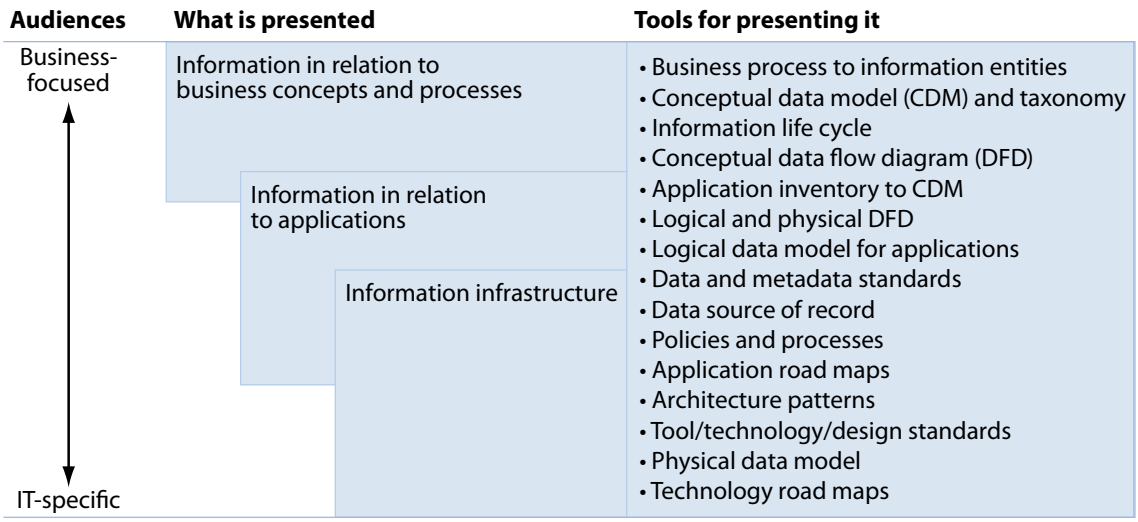
- **Target deliverables to stakeholders.** IA deliverables must address the information needs of its audience to have an impact. In Acme's product profitability case, for business management to support and fund the necessary work, it needs target-state architecture for product revenue and cost information that explains how it will be able to get answers to questions it can't get today. Detailed models and technical discussions will be lost on business management. The AD teams need a practical road map, with information models and transformations and data infrastructure elements, so that they can assess project implications (see Figure 5).

- **Gain stakeholder agreement.** The IA program associates stakeholders with pain points. But architects should consider other candidate stakeholders like the IT program and portfolio management office, information security, compliance, relationship managers, and senior IT management — all beneficiaries and therefore potential participants in a successful long-term IA program. Make sure these stakeholders agree that the scope, pain points, and strategy are appropriate.

Use A Top-Down Approach To Sustain The Program's Focus

It's easy to get lost when developing IA. The current state of information management and use may be in such disarray that the effort to document it is daunting. Bottom-up approaches get lost in the details of understanding all the use cases for any specific category of information. To sustain the program's focus, architects should:

Figure 5 Match Deliverables To The Information Needs Of The Audience



Source: Forrester Research, Inc.

- **Model only the business areas within scope.** Initially scope may be based on a business process or a business value chain, or it may be based on defining a high-level business capability and analyzing the information categories supporting this capability.[7] For example, product management at Acme can be analyzed as a business capability that includes profitability analysis. Product management information would include data on the cost of design, development, delivery, promotion, selling, and servicing a product.

- **Define a logical target state before investigating current state.** The logical target-state architecture is a clean slate, which solves for current pain points for the scoped areas. There are multiple benefits to defining this clean slate solution: First, it focuses current state investigation on the important details rather than every detail. Second, it forms the base from which the EA groups sell the solution to IT and business management. Third, the EA organization becomes better positioned to influence proposed projects to build out parts of the architecture by comparing them with the logical target state.

- **Develop alternatives to close the gap between current and target states.** The value to stakeholders will be the discussion of how to solve business and IT pain points. Develop several alternatives, with analysis of the work and tradeoffs associated with each alternative to achieve stakeholder buy-in on follow-on actions. For Acme's product profitability analysis, there may be more than one alternative for the systems of record as well as for processing into analysis-ready information. Alternatives may have different upstream and downstream implications.

- **Address policy and process gaps.** Identify potential organization implications of closing the gaps, such as data management. Examining what's needed within the current organizational context is necessary to bridge the gap with the target state. Projects must address information governance issues like who owns governance, what are the rules around information management, and how to address compliance.

- **Identify the metrics that link IA deliverables to results.** An IA must provide a road map to a target state. Derive metrics from this road map; for example, if the target state provides for all systems to use a consistent model for customer data, you should identify a metric for the percentage of systems using this consistent model. Metrics for tracking program success can be directly developed from these goals and the strategy to address the pain points.[8]

  "We report on the progress IT is making on consolidating systems — which supports the business goal of standardized information and processes." (Director of EA)

- **Couple IA implementation with specific business functionality**. EA groups must establish close ties to the groups responsible for IT planning and portfolio management. EA must recognize that while in some cases the IA deliverables will have sufficient executive-level support to initiate targeted projects, in most cases they must be linked to other planned projects. For example, the product profitability IA at Acme is a prerequisite to a decision-support project for new product introductions.

CASE STUDY NO. 1: MANUFACTURER USES IA TO STREAMLINE BUSINESS

A leading IT hardware, software, services, and consumer products manufacturer is consolidating and simplifying its overall business structure. This firm has moved from a business structure of multiple business units organized around product lines — each with its own processes, applications, and information — toward a streamlined enterprise model with centralized processes, applications, and information management for key business activities.

The Problem: Too Many Systems And Sources Of Information

There are several business imperatives driving centralization and simplification of business information and the systems that support them.

- **Consolidate systems to reduce costs.** From an IT perspective, it is more efficient to support fewer systems and to promote consistency within them.

- **Reduce metric reconciliation time.** This manufacturing firm has long had a culture of measurement. The consistency and simplification of information reduces the time management has to spend reconciling metrics so that it can focus on using the right metrics to drive business

efficiency. The goal? Deliver consistent data for costs, revenues, customers, and materials across all product lines and distribution channels. Product line and distribution channel differences are explicit, not just a historical artifact.

> "We've had too many models, too many hierarchies. For example, product structure — what in a store is a SKU, the retailer orders as base plus options, the plant describes as BOM, and finance describes it as product plus options for sales credit. Understanding product cost and profitability depends on where you look. Information simplification addresses this." (Director of EA).

The Manufacturer's IA Playbook

To develop the IA, the EA group developed an overall model of the business to guide its work. This model includes a high-level description of the target state, where business processes run on common systems using common information models, and the current state, with all its diversity and redundancy. Noted the director of EA: "We've developed a deep understanding of the relationship of information CRUD (create, read, update, delete) to the business processes." The EA group working with other parts of the IT organization is drilling down one business process area at a time, such as financials, supply chain, and customer data. The current and target state definitions, formats, and systems for key information concepts, such as "bill of materials," are now documented.

To keep stakeholder buy-in, a centralized business intelligence leadership team, comprised of key business process and IT executives, reviews, approves, and manages overall compliance with the directions from the IA program. For each business process, the EA group is producing:

- **Conceptual data models.** These are cross-referenced to the high-level model of the firm's business and used to communicate the overall scope to stakeholders.
- **Logical data models for target state apps.** The LDMs drill down to the specific areas of interest. Gaining the ability to analyze the structure of existing information and provide specific guidance for the target state justifies the effort to develop LDMs.
- **Technical architecture and standards.** The technical data architecture describes the physical implementation, data stores, data extraction, movement, and aggregation processing that connects transaction systems to business management systems.
- **Information management process definitions.** To address policy and process gaps, the manufacturer developed process models to describe the life cycles, security dimensions, and the data that flows through business processes.
- **Gap assessment, alternatives evaluation, and road map.** The EA group is responsible for developing and gaining organization commitment to the road map for business process areas. Road map decisions are input into the project portfolio management processes.

The Progress Report: Toward Information Simplification

Today, the IA program is making notable strides. The EA group is mandated by senior management to direct the centralization and simplification of the information needed to run the business. Non-target systems are designated for eventual retirement. The firm has converged on a consolidated application set for human resources, and is in the process of doing likewise for financials and the supply chain. The EA group regularly reports on the progress of its consolidation road map to corporate management.

CASE STUDY NO. 2: HEALTH INSURER USES IA TO CHANGE BUSINESS STRATEGY

A group health insurance carrier is changing its business strategy from a focus on the employer to a focus on the subscriber/member to expand relationships with its subscribers. This is a significant shift within the company and creates new requirements for how information about these members is managed and used. However, existing systems and system-supported processes do not reflect this orientation.

The Problem: Information Fragmentation Was A Long-Standing Impediment

Initially, the insurance carrier had no IA in place, and current-state understanding was as fragmented as the information. Existing issues with information fragmentation, redundancy, and quality burdened the effort and quality of IT deliverables. The lack of an IA also restricted the EA group's ability to effectively guide AD projects.

> "Architects have had crummy data skills and have been the source of many of the problems we have today. And we had a lot of information on the issues, but it was not understood by stakeholders — for example, defining the system of record." (EA group head)

The Insurer's IA Playbook

The business provided the EA group with the business driver — supporting the shift from an employer-focused to a subscriber-focused business strategy. EA was responsible for developing the road map of system changes to support this business change. Senior business and IT management were the recipients of this road map because the next step was to plan the necessary system investments. The EA group used a top-down approach and:

- **Developed understanding of current information use, future requirements.** The EA group interviewed business and IT leaders to understand the current state of information usage and issues. It was then able to develop business requirements for the target state of information usage as a result of the changed business model.

- **Constructed a conceptual information model.** The model was based on the target business operating model. The EA group defined 20 key entities — referred to by EA as subject areas — and prioritized them based on their impact to the business.

- **Mapped these entities to the target and current state.** The EA group assessed the current state for information creation, usage, and movement at a logical level and a deeper technical level, with systems mapped to this high-level information model. The group compared the current state with a target state system map for entities in the conceptual information model to evaluate gaps between the target state and the current state.

- **Developed a road map.** The road map identified key architectural elements that were required to support the changing strategy — including changes to existing systems, new systems, an integration framework, and necessary organization and process changes for data management. For example, one of the recommendations within this road map was to develop a centralized data quality service using a rules engine.

The Progress Report: A Changing Business Model

This insurance company is beginning to execute the road map through a multiyear set of initiatives. An additional benefit is in the overall business and IT understanding of the businesses information. Business management is on board with the road map because they see how it will help it achieve its goals. According to the EA group head: "The business is thinking differently — this is now the source of competitive advantage in bids."

The IA program has also led to recognition of data management and governance as a strategic issue. The IT and business structures to address this are going through the process of redefinition.

CASE STUDY NO. 3: COMMODITIES TRADER CLEANS UP IT

A commodities trading firm began the development of an IA after it realized that years of IT-developed point solutions had created an environment where information quality and information sourcing were issues now visible to the business.

The Problem: IT Projects Suffered

Information quality had become an issue because application projects that needed to access or acquire data would use the nearest and easiest source for this data — without understanding any limitations as to how the data was created or modified. For example, if a business intelligence application needed data about commodity contracts, possible sources for this information were a choice between the system the contract was originally entered into, the system used to determine risk, the system used to manage shipping, or the system used to support financial management — although each of these systems may have modified the original contract data. But there was no way for a project team to discover what the best source was for a category of information — the relationships and a system of record were undefined.

The Trader's IA Playbook: Collaboratively Build An Information Model

Recognizing that building a complete IA would require a multiyear effort, the EA group decided to focus on common information entities that were used and shared across the firm's processes: party, market, geography, and commodity. And it determined that its primary stakeholders would be the AD groups — these groups were the creators of many of the problems this firm faced. Its approach was top-down, and developing "just enough architecture" to guide the AD teams by:

- **Building a business information model.** The foundation for the IA was a high-level model of the business that described major functions and processes. From this, and incorporating known business drivers, the group developed what it called a "business information model" that identified the seven conceptual entities that were relevant across the business functions and processes. These were documented within an entity/relationship model, with all relationships indicated.

- **Prioritizing IA increments by anticipated system investment.** Drill-down activities to refine these models were prioritized based on business and IT plans for investing in and changing business processes and associated systems. For example, the company prioritized investments for the systems involved with supply chain processes — so the entities that were most closely associated with this process were refined first.

- **Leveraging AD projects to detail the information model.** The EA group recognized that its available bandwidth was not sufficient for a complete modeling effort, and so it planned its work by leveraging AD project teams. The project team and the information architect collaborated to refine the conceptual model into complete logical models. The project teams would take the conceptual definition for an entity and expand it into the logical data model. Once complete, these models would be added back to the information model repository where other projects could reference them.

- **Packaging design expertise to facilitate build-out.** The EA team used an approach that developed design patterns for specific data-oriented application elements, such as operational data stores and data warehouses, to bring consistency of design and implementation to these elements.[9]

The Progress Report: Raising IT's Information Expertise Benefits The Business

With the foundational work performed to help IT clean up its own handling of the firm's information assets, IT is now positioned to engage effectively with the business for new project work. The firm is developing a multiyear strategic plan, including business processes assessments. The IA deliverables are being used in conjunction with business process and gap analysis.

HOW YOU KNOW YOU'RE ON THE RIGHT TRACK

There is always a risk that an IA initiative, because it is abstract, misses the mark and is unsuccessful. The plan for IA should include frequent checkpoints to ensure you are on the right track. More than just looking at IA program status and effort, examine the program for key diagnostics (see Figure 6).

Figure 6 Diagnosing Your IA Efforts

	On the right track	Warning signs
Program scope	Iterative across business-wide program, with each iteration producting timely, useful deliverables	Tackling too much breadth across the business and depth of detail before useful deliverables are complete
Stakeholders	Identified, broadly based, regular check-in with sponsors	Stakeholders not identified or narrowly based; check-ins ad hoc or absent
Business and IT drivers/ pain points	Specific: "improve quality of customer data as measured by"	Nebulous: "Information is our most important asset"
IA program priorities and goals	Clear and validated by stakeholders	Unclear or not validated
Approach for driving change	IA deliverables direct clear outcomes	Unclear outcomes or unclear linkage to IA deliverables
Deliverables	Targeted to stakeholders' needs	Stakeholders don't find deliverables clear or relevant
Program metrics	Outcome as well as progress-based	No metrics or progress-based only
Value message	Crisp, relevant, succinct: "solve this problem by . . . which will produce the following results . . ."	Vague

Source: Forrester Research, Inc.

RECOMMENDATIONS

ENTERPRISE ARCHITECTS: START AT A HIGH LEVEL, BUT BE SURE TO START

IA sounds daunting, but bounded efforts achieve substantial results. And it is not a one-shot, "do it and you're done" effort; EA groups must address IA as part of their ongoing responsibility to IT. This means that EA groups must build an IA competency. They must be continuously on the lookout for business and IT drivers, and trace these back to their information roots. Finally, EA groups must plan their IA program, build IA iteratively, execute top-down, and effectively leverage ongoing efforts across IT to add detail only when it is needed.

WHAT IT MEANS

INFORMATION STRATEGY MUST ALIGN WITH BUSINESS STRATEGY

CIOs know that IT must shift focus from technology piece parts to aligning with business strategy and enhancing business process effectiveness. But to do this, IT must understand the business' use of information, in both current practices as well as how the business wishes to operate. So an IT strategy supporting the business must include an information strategy that builds on IA and documents how IT will structure its organization, processes, and technologies in response to the business' information needs. This information strategy will accommodate business needs for greater collaboration and information sharing, access to existing business knowledge, and extending the business products and services to embed them into their customers' processes.

ENDNOTES

[1] According to the Data Warehousing Institute (TDWI)-Forrester Quarterly Technology Survey, the impact of information quality defects is painfully clear. Some 30% of respondents indicate that problems were serious enough to percolate up to the CXO level, requiring or attracting the attention of the executive function. Twelve percent acknowledge missed deadlines in closing the company books and 10% report revenues improperly booked or credited due to information and data quality lapses. See the June 29, 2004, Best Practices "The Impact Of Information Quality Lapses."

[2] Most enterprises are drowning in a sea of unorganized information, unable to leverage its full potential, as shown by Forrester's Customer Experience research, which points to firms routinely failing the test of leveraging information in interactions (i.e., email service and phone self-service design) with their customers. See the June 12, 2005, Best Practices "A New Perspective On Information Management."

[3] Enterprises frequently find that the existing portfolio of applications creates multiple copies of the same data to meet the needs of specific applications. While this is justified for some purposes, there is always a cost in terms of the storage, the processing to move or synchronize multiple copies, as well as the development and administrative effort to support this redundancy. See the April 22, 2004, Best Practices "Redundant Data Is A Mixed Blessing."

[4] Forrester has identified four primary domains for enterprise architecture: business architecture, application architecture, infrastructure architecture, and information architecture. See the November 11, 2002, Planning Assumption "The Pillars Of Enterprise Architecture Terminology."

[5] An IA implementation provides enterprisewide access to the definition of data elements; enterprisewide access to consistent, correct, and timely data; and the appropriate security levels for all data. It also provides the base for decision-support systems, analytical processing, and effective data mining systems. See the June 16, 2005, Best Practices "Creating The Information Architecture Function."

[6] Business and IT drivers may reflect current pain points, or may be derived from business or IT strategies. See the June 17, 2005, Best Practices "Connecting Business Drivers To Enterprise Architecture."

[7] A model of a business area may be based on the business's value chain. This facilitates the identification of key capabilities needed to support the value chain. See the June 17, 2005, Best Practices "Connecting Business Drivers To Enterprise Architecture."

[8] Metrics typically fall into two categories: activity metrics and value metrics. Value metrics are the most useful for communicating to the larger IT organization on progress toward established goals. These metrics should be derived from the goals themselves, using a structured technique. See the August 1, 2005, Best Practices "Goal-Question-Metric Method Is Still The Most Pragmatic Way To Develop Metrics."

[9] Design patterns are a recognized best practice for facilitating the adoption of EA deliverables by AD teams. See the November 23, 2004, Best Practices "Data Warehousing Patterns: Business Scenarios, Data, And Design Functions."

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